

## Thermometry, Spain, CEM (Centro Español de Metrología)

Calibration or Measurement Services			Measurand Level or Range			Measurement Conditions/Independent variables		Expanded Uncertainty						
Quantity	Instrument or artifact	Instrument Type or Method	Minimum value	Maximum value	units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?	Comments	NMI Service Identifier
Temperature	Argon point for SPRT	Comparison with a cell	-189.3442	-189.3442	°C	Ambient temperature	(23 ± 1) °C	1.3	mK	2	95%	No	Approved on 18 May 2004	1
Temperature	Indium point	Comparison with a cell	156.5985	156.5985	°C	Ambient temperature	(23 ± 1) °C	1.1	mK	2	95%	No	Approved on 18 May 2004	5
Temperature	Tin point	Comparison with a cell	231.928	231.928	°C	Ambient temperature	(23 ± 1) °C	0.9	mK	2	95%	No	Approved on 18 May 2004	6
Temperature	Aluminium point	Comparison with a cell	660.323	660.323	°C	Ambient temperature	(23 ± 1) °C	4.0	mK	2	95%	No	Approved on 18 May 2004	8
Temperature	Long stem SPRT	Calibration at the triple point of Argon	-189.3442	-189.3442	°C	Ambient temperature	(23 ± 1) °C	2.0	mK	2	95%	No	Approved on 18 May 2004	10
Temperature	Long stem SPRT	Calibration at the triple point of Mercury	-38.8344	-38.8344	°C	Ambient temperature	(23 ± 1) °C	0.5	mK	2	95%	No	Approved on 18 May 2004	11
Temperature	Long stem SPRT	Calibration at the melting point of Gallium	29.7646	29.7646	°C	Ambient temperature	(23 ± 1) °C	0.6	mK	2	95%	No	Approved on 18 May 2004	13
Temperature	Long stem SPRT	Calibration at the freezing point of Indium	156.5985	156.5985	°C	Ambient temperature	(23 ± 1) °C	1.5	mK	2	95%	No	Approved on 18 May 2004	14
Temperature	Long stem SPRT	Calibration at the freezing point of Tin	231.928	231.928	°C	Ambient temperature	(23 ± 1) °C	1.5	mK	2	95%	No	Approved on 18 May 2004	15
Temperature	Long stem SPRT	Calibration at the freezing point of Zinc	419.527	419.527	°C	Ambient temperature	(23 ± 1) °C	2.0	mK	2	95%	No	Approved on 18 May 2004	16
Temperature	Long stem SPRT and HT SPRT	Calibration at the freezing point of Aluminium	660.323	660.323	°C	Ambient temperature	(23 ± 1) °C	9.0	mK	2	95%	No	Approved on 18 May 2004	17
Temperature	Long stem HT SPRT	Calibration at the freezing point of Silver	961.78	961.78	°C	Ambient temperature	(23 ± 1) °C	18	mK	2	95%	No	Approved on 18 May 2004	18

## Thermometry, Spain, CEM (Centro Español de Metrología)

Calibration or Measurement Services			Measurand Level or Range			Measurement Conditions/Independent variables		Expanded Uncertainty						
Quantity	Instrument or artifact	Instrument Type or Method	Minimum value	Maximum value	units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?	Comments	NMI Service Identifier
Temperature	Radiation thermometers	Calibration at the freezing point of Copper	961.78	2200	°C	Wavelength	650 nm and 950 nm	1 to 4	K	2	95%	No	Approved on 18 May 2004	26
						Ambient temperature	(23 ± 1) °C							
						Humidity	< 60 %							